



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/594,672

07/14/2008

Sung Jin Hwang

H1-0297

2297

34610 7590 12/03/2009

KED & ASSOCIATES, LLP

P.O. Box 221200

Chantilly, VA 20153-1200

EXAMINER

HARDEE, JOHN R

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,672	Applicant(s) HWANG ET AL.	
	Examiner JOHN R. HARDEE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Applicant is reminded that a species election requirement remains in effect.

Additional species were not searched because the elected species was not found to be patentable.

Claim Rejections - 35 USC § 102

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Anderson, US 3,224,955. The reference discloses a process for making mineral oil lubricant for refrigeration. Paraffinic lubricating oil distillate is extracted with solvent and hydrogenated to produce a final refrigerator oil lubricant (see flowchart, col. 2, lines 1+). The examiner takes the position that the oil is made under conditions that do not produce fullerenes, the oil is distilled, which would leave fullerenes in the distillation pot, the compositions are dearomatized, which would remove aromatic fullerenes and hydrogenated, which would reduce C60 or C70 fullerene to hydrogenated species. Between these considerations and the lack of any disclosure that the mineral oil does contain fullerenes, it is reasonable to assume that the oil is free of fullerenes, or contains less than 0.1% of same. It is well established that "less than" reads on zero. Regarding the newly added product-by-process language, applicant is reminded that a

Art Unit: 1796

product by process is a product, and it is incumbent upon applicant to produce evidence that a different product arises from that of the prior art.

4. Claims 1-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over KR 1020030077095 (abstract). The reference is in Korean. It was supplied by applicants, so the applicants are assumed to be familiar with its contents. The abstract discloses a lubricant comprising a base oil, which may be mineral oil or synthetic oil in admixture with 0.1-5% of fullerene soot powder which contains 3-45% by weight of pure fullerene. At the lower end of the disclosed range, such an oil could contain 0.003% of fullerene. "Use of an agitator" amounts to simple stirring, which can be reasonably inferred where solids are mixed into liquids. Synthetic oils and mineral oils are well known refrigeration lubricants. The reference does not disclose an oil which meets applicant's limitations with sufficient specificity to constitute anticipation. However, it would have been obvious at the time that the invention was made to make such an oil, because such an oil can be made by following the teachings of the reference as outlined above. Regarding the newly added product-by-process language, applicant is reminded that a product by process is a product, and it is incumbent upon applicant to produce evidence that a different product arises from that of the prior art.

Response to Arguments

5. Applicant's arguments filed October 29, 2009 have been fully considered but they are not persuasive. Applicant argues that the cited references do not teach or suggest that the carbon nanoparticulate is infused into the lubricating oil using an agitator or a

Art Unit: 1796

ultrasonic dispersion device. This is correct, but it is not persuasive because applicant has claimed products in product-by-process language. The examiner has cited references which disclose the same oil containing the same amount of fullerene, which may be as low as 0%, according to the claims. "Use of an agitator" amounts to simple stirring, which can be reasonably inferred when solids are mixed into liquids. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, Dr. John R. Hardee, whose telephone number is (571) 272-1318. The examiner can normally be reached on Monday through Friday from 8:00 until 4:30. In the event that the examiner is not available, his supervisor, Mr. Harold Pyon, may be reached at (571) 272-1498.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8100.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John R. Hardee/
Primary Examiner
December 1, 2009